

Patent Claims

1. Frequency shifted feedback emission source,
characterized by the fact that a means is used to increase emission frequency component beat intensity.
2. Frequency shifted feedback emission source according to the preceding claim,
characterized by the fact that the means to increase emission frequency component beat intensity is configured as means for non-stochastic emission frequency component beat intensity increasing.
3. Frequency shifted feedback emission source according to the preceding claim,
characterized by the fact that the means to increase emission frequency component beat intensity includes an injection light source.
4. Frequency shifted feedback emission source according to the preceding claim,
characterized by the fact that the injection light source includes an injection laser.
5. Frequency shifted feedback emission source according to one of the claims 3 or 4,
characterized by the fact that the injection light source is configured to inject irradiation into the resonator of the frequency shifted feedback emission source, specifically for irradiation into the amplification medium.

6. Frequency shifted feedback emission source according to one of the claims 3 through 5, characterized by the fact that the injection light source is configured for emission of irradiation of an irradiation frequency close the upper or lower amplification threshold (G-1).
7. Frequency shifted feedback emission source according to one of the claims 3 through 6, characterized by the fact that the injection light source for the irradiation of injection light is narrowband in reference to the amplification bandwidth of the frequency shifted feedback emission source, specifically a width below 5%, preferably below 1% of the bandwidth of the amplification of the frequency shifted feedback emission source.
8. Frequency shifted feedback emission source according to one of the claims 3 through 7, characterized by the fact that the injection light source is configured for irradiation of the appropriate intensity and/or phase of the optical carrier.
9. Frequency shifted feedback emission source according to the preceding claim, characterized by the fact that the injection light source is configured for regular modulation of intensity and/or phase of the injection light.
10. Frequency shifted feedback emission source according to the preceding claim, characterized by the fact that the injection light source is configured to perform a periodic modulation of intensity and/or phase that changes with time.

11. Frequency shifted feedback emission source according to one of the claims 9 or 10, characterized by the fact that the injection light source is configured so at least temporally one linear modulation frequency variation takes place.
12. Frequency shifted feedback emission source according to one of the claims 8 or 11, characterized by the fact that the injection light source is configured so that a modulation lies in the magnitude order and/or close to the distances determined using the emission source and the given chirp rate from the frequency shifted feedback emission source is obtained.
13. Frequency shifted feedback emission source according to one of the preceding claims, characterized by the fact that the frequency shifted feedback emission light source is a laser.
14. Frequency shifted feedback emission source according to one of the preceding claims, characterized by the fact that an optic fiber is used internally in the resonator.
15. Distance measurement configuration with an emission light source according to one of the preceding claims.
16. Distance measurement configuration according to the preceding claim, characterized by the fact that irradiation optics are used to broadly illuminate a surface to be investigated with light from the emission source

and a means is used to obtain a beat spectrum containing height profile information.

17. Distance measurement configuration according to one of the preceding distance measurement claims,
characterized by the fact that an optic is used to direct irradiation from the emission light source to a defined partial range of the object.
18. Process for operating a frequency shifted feedback emission light source, characterized by the fact that the beat intensity of the frequency components of the emitted irradiation are increased beyond what is achieved in a stationary condition through spontaneous emission.